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GEOPHYSICAL VARIABLES AND BEHAVIOR: XXXI. GLOBAL GEOMAGNETIC ACTIVITY DURING SPONTANEOUS PARANORMAL EXPERIENCES: A REPLICATION

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Summary.—A retrospective analysis was completed of the global geomagnetic activity (aa indices) for the day, month, and year in which subjective experiences of telepathy-clairvoyance ($n = 57$), precognition ($n = 56$), and *post mortem* ($n = 74$) phenomena were reported to have occurred. All of the experiences referred to death, sudden illness, or intense crisis to members of the family or to friends. The experiences were obtained from a series of first-hand reports from FATE magazine and involved all cases that contained the day, month, and year (1920 through 1967) of occurrence. Days on which telepathy-clairvoyance experiences occurred displayed significantly much lower geomagnetic activity (aa = 13.5 ± 10.9) than days on which the precognition (25.5 ± 23.1) and postmortem (26.4 ± 19.1) cases occurred. The aa values for the days on which the telepathy-clairvoyance experiences occurred were also significantly less than the average geomagnetic activity for the months or years in which the experiences occurred. This was not evident for the other types of cases. Results for telepathic-clairvoyance are similar in both direction and magnitude to those from two other data sources. We conclude that such phenomena should be considered within the framework of behavioral epidemiology.

Reports of spontaneous paranormal experiences have been given multiple explanations (2). We consider these phenomena the subject matter of behavioral epidemiology (4). From this approach, the critical features are the date of the experience (rather than arguments about its validity) and the concomitant environmental conditions. In two retrospective studies (5, 6), days on which telepathic-clairvoyant experiences were reported to have occurred displayed much less global geomagnetic activity than the days before or after the experiences or than the average values for the months or years in which the experiences occurred. Geomagnetic activity had been selected as a test of the extremely low-frequency electromagnetic field hypothesis for telepathic-clairvoyant phenomena (3).

We predicted that if some geomagnetic factor was specific to these experiences, then other types of psi phenomena should not display the same relationship. They might be used as case controls. In the present study, *all* of the cases that contained the day, month and year of the occurrence were taken from the sections: "True Mystical Experiences" and "My Proof of Survival" (first-

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hand reports) from a series of FATE magazines. Of the 216 cases that contained the temporal criteria, 187 were clearly attributable to one of three categories. They were telepathy-clairvoyance ($n = 57$), precognition ($n = 56$), and *post mortem* experiences ($n = 74$).

Telepathy-clairvoyance experiences involved references to death, sudden illness, or crises to family members or friends within a few minutes of the actual event. Precognition involved experiences that allegedly preceded the actual event by several minutes (usually hours) to within primarily three to four days. Post mortem experiences involved references to the feeling of the "presence" of recently deceased (usually within three to four days after death) friends and relatives; the cases were similar to those analyzed in previous studies (2). Eighty percent of the experients were women. Chi-squared analyses indicated no significant ($p > .05$) differences among the frequencies of the three categories with respect to the months of the occurrences or to sex. There were no significant ($p > .05$) differences between the proportion of telepathic-clairvoyant experiences or precognition that referred to death or illness/crisis. One-way analyses of variance indicated no difference ($p > .05$) in the time ($M = 14.1 \pm 11.0$ yr.) between the experience and its report (publication). All experiences occurred between 1920 and 1967. All analyses were completed with SPSS software on a DEC2020 System computer.

Measures of global geomagnetic activity (1), aa indices, were obtained for the northern hemisphere for the day, the month, and the year in which each experience occurred. Both the means ($F_{2/184} = 9.08$, $p < .001$, equivalent to an ω^2 of 11%) and standard deviations (Bartlett's Box $= 14.34$, $p < .001$) for the aa values on the days of the telepathic-clairvoyant (13.5 ± 10.9), precognition (25.5 ± 23.1), and *post mortem* experiences (26.4 ± 19.1) were statistically significant. *A posteriori* analyses ($p < .01$) indicated that the difference between the means was based on the comparison of telepathic-clairvoyance versus the other two kinds of experiences, which did not differ from each other. A Kruskal-Wallis test (because differences in variance were significant) also indicated that the geomagnetic activity on the days of the telepathic-clairvoyant experiences (mean ranks $= 63.6$) was significantly ($\chi^2 = 27.18$, $p < .001$) lower than for the days for the other two experiences (mean ranks $= 100.9$ and 121.1, respectively).

t tests for correlated data indicated that the geomagnetic activity on the days of the telepathic-clairvoyant experiences was significantly ($p < .001$) lower than the aa index for the month (21.9 ± 7.5) and year (21.7 ± 5.8) in which they occurred ($t_{56} = 5.54$, 5.27, respectively); however, there was no significant difference between the aa values of the months and years in which the telepathic-clairvoyant experiences occurred. A Friedman's nonparametric test reaffirmed that the daily aa values were significantly lower than the monthly

($\chi^2 = 40.26$, $p < .001$) and the yearly values. However, there were no statistically significant differences between aa values on the days of the precognition experiences and the aa values for the month (22.6 ± 8.2) or years (22.8 ± 5.1) in which they occurred ($t < 1.00$). Although there were no statistically significant differences between aa values for the months (21.9 ± 7.6) and years (22.4 ± 5.2) in which the *post mortem* experiences occurred, the aa values for the days on which these occurred tended to be slightly ($t = 2.04$, $p = .05$) higher than the months in which they occurred.

These results confirm both the direction and magnitude of a pattern reported in two other case collections (5, 6) of spontaneous, subjective psi experiences. One of those studies involved approximately 100 cases which occurred between the years 1868 and 1887. Experiences that have been frequently labelled as telepathy-clairvoyance, particularly those involving death and crisis to friends and family, seem to occur more frequently during quiet global geomagnetic activity. Although these repeated results certainly do not support the construct validity of the experiences, the strength and persistence of the relationship may help elucidate the mechanisms involved with their occurrence.

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